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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/621,388 | 07/21/2000 | Daniel Yellin | 162/01498 | 4449 |

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| EXAMINER |
|---|
| PHU, PHUONG M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2631 | 9 |

DATE MAILED: 09/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/621,388 | Applicant(s) YELLIN ET AL. | |
|---|---|---|---|
| | Examiner Phuong Phu | Art Unit 2631 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *35-37* is/are allowed.

6)☐ Claim(s) *1,2,4-30 and 32-34* is/are rejected.

7)☒ Claim(s) *3 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4,5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 4-30 and 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Wright et al (6,587514).

As per claims 1, 2, 4, 5, 6, 20, 21 and 22, see figures 1-3, 4A and 4B, and col. 7, line 29 to col. 14, line 13, Wright et al discloses a method and associated system (figure 1), as claimed, wherein the method/system comprises:

first input step/means (inherently included) for providing values (Vm(t)) to a processing path;

second input step/means (52, 58, 60, 66, 68) for passing the provided values through an modulator (58), a non-linear amplifier (60) and demodulator (66) to provide distorted values (Vf(t));

determination step/means (70) for estimating parameters (X+(t)) for cancellation of IQ mismatch effects in response to the provided values and the distorted values.

As per claims 7 and 8, Wright et al discloses that estimating the parameters (X+(t)) comprises accumulating a number of pairs of the provided values and respective values for a period of time, and estimating from these pairs (see figure 9, and col. 17, lines 50-58, and texts related to figure 9).

As per claim 9, Wright et al discloses that passing the values to produces the distorted values comprises passing a multiplier (52B) which performs IQ mismatch cancellation based on current values of the parameters (X+(t)) which is to be estimated (see figures 1, 3 and 4B).

As per claim 10, Wright et al discloses that estimating the parameters (X+(t)) comprises means (70) for determining a next step correction of the current value of the parameters (see figure 1).

As per claim 11, Wright et al discloses step/means (70) for repeating the estimating of the parameters in a number of repetitions (see figure 1).

As per claims 12 and 13, Wright et al discloses step/means (70) for retrieving from storage initial values of the parameters, and storing the estimated value of the parameter for later use (see col. 17, lines 47-49 and col. 19, lines 54-56).

As per claim 14, Wright et al discloses step/means (52A, 52I, 52H) for providing values generated for the IQ mismatch cancellation (see figure 3).

As per claim 15, Wright et al discloses that the provided value (Vm(t)) is provided without relation to the IQ mismatch cancellation (see figure 1).

As per claim 16, in Wright et al, the non-linear amplifier (60) inherently has a gain which is depended on the magnitude of is input signal.

As per claim 17, see figures 1 and 3 and related texts, Wright et al discloses a method comprising:

step/means for estimating an equivalent gain of an amplification unit (64) of a communication device (50) (see figure 1, and col. 25, line 15 to col. 26, line 41);

step/means (70, 52 F, 52 H) (see figures 1 and 3) for approximating values of a matrix representing an IQ mismatch effect based on current values of parameter for cancellation of an IQ mismatch effect; and for selecting a next step value of the parameters for cancellation of the IQ mismatch effect, which next step values minimize a function which depend on values passed through the communication device and depends on the estimated gain and the approximated matrix (see figure 1 and 3, and col. 17, lines 7-20, and texts related to figures 1 and 3).

As per claim 18, Wright et al discloses that the estimating step/means estimates separately for each value passed through the communication device (see figure 12, and related texts).

As per claim 19, Wright et al discloses that the estimating step/means estimates once for a plurality of accumulated values (Pin) passed through the communication device (see figure 12, and related texts).

As per claim 23, Wright et al discloses that the determination step/means determines a corrected value of the parameters which minimize a function based on values received form both of the provided values and distorted values (see col. 17, lines 7-20).

As per claim 24, Wright et al discloses that the determination step/means determines the parameters for each of at least two cancellation units (52A and 52B) (see figure 3).

As per claim 25, Wright et al discloses that the determination step/means determines the parameters in plurality of steps (see figure 9, and related text).

As per claim 26, 27, 28, 29, as applied above to claim 1, Wright et al discloses a system (figure 1) comprising an modulator (58), a demodulator (66), a mismatch adjust circuitry (52B) (see figure 3), a mismatch trainer (70, 52H, 52I) (see figures 1 and 3).

Further regarding to claim 29, Wright et al discloses a predistorter (52A) (see figure 3) and a predistorter trainer (70) wherein the demodulator converts signals which passed through the modulator back to baseband and to provide the converted signals to the mismatch trainer and the predistorter trainer .

Claim 30 is rejected with reasons set forth above for claim 1.

As per claim 32, Wright et al discloses that the mismatch adjustment circuit comprises multipliers (see figure 4B).

Claim 33 is rejected with reasons set forth for claim 25.

As per claim 34, Wright et al disclose a processor (52, 70) which includes the predistorter, predistorter trainer, the mismatch adjustment circuit and the mismatch trainer (see figure 1).

***Allowable Subject Matter***

3. Claims 35-37 are allowed.

4. Claims 3 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 703-308-0158. The examiner can normally be reached on M-F (8:30-6:00) First Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Phuong Phu
Primary Examiner
Art Unit 2631

Phuong Phu
08/22/03

PHOUNG PHU
PRIMARY EXAMINER